❑ Growth of semi-permeable membrane of defined geometry - by **flowing gas** and **liq.** nutritional phases over substrate having cell layer which grows in controlled manner and is removed for further use, e.g. in human organ transplantation stations.

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The growth of a semi-permeable membrane uses a reaction chamber (1) and a medium chamber (2) through which a gas phase and a liquid nutritional phase flow. They pass over a semi-permeable membrane (M1) which serves as the substrate for the new membrane. The novelty is that the new cell material is inoculated to the semi-permeable membrane to form a first layer. The lower side of the semi-permeable **membrane** is **flushed** by nutritional solution and the upper side is flushed by the gas phase. Controlled cell growth ensues to form a number of layers and a cell structure (ML) from which metabolic by-products are removed by the gas and liquid phases to produce a cell structure which can be removed under sterile conditions for further use.

USE- The process and assembly produce a semi-permeable membrane of defined geometry, as used in the stations associated with human organ transplantation.

ADVANTAGE - The process and assembly are suitable for automated operation, thus largely removing the requirement for manual intervention. Dwg.1/3